WE CLAIM AS OUR INVENTION:

1.   A computer-assisted method for detecting diaphragm edges in an image, caused by a diaphragm used to gate radiation for producing the image, said image containing said diaphragm edges and other image edges, comprising the steps of:

supplying image data representing said image to a computer together with information describing an inner structure of the diaphragm; and

in the computer, analyzing said image data for detecting all image edges in the image, and determining said diaphragm images from among the detected image edges using said information.

2.   A method as claimed in claim 1 wherein said image comprises a plurality of two-dimensionally arranged pixels, each having a grey scale value between a minimum value and a maximum value, and wherein said image date represent the respective grey scale values of the pixels, and wherein the step of detecting said image edges in said image comprises determining for each pixel, a derivative value from the grey scale value for that pixel and a grey scale of at least one other pixel and determining said image edges using said derivative values.

3.   A method as claimed in claim 2 comprising determining said derivative values as a sum of at least four summands, and forming each summand as a product of said derivative in a derivative direction and a weighting factor, and comprising determining said weighting factor in said computer specific to the derivative.

4.   A method as claimed in claim 3 comprising employing pairs of directions as said derivative directions, the directions in each pair being oppositely aligned.

5. A method as claimed in claim 4 comprising employing pairs of derivative directions disposed at an angle that is different from 0° and 180°.

6. A method as claimed in claim 5 comprising employing pairs of derivative directions disposed at an angle of 90°.

7. A method as claimed in claim 5 wherein said image comprised main axes orthogonal to each other and comprising employing derivative directions proceeding parallel to said main axes.

8. A method as claimed in claim 3 comprising, in said computer, reducing the weighting factor that is specific to the derivative for a pixel under consideration when said computer determines a non-zero derivative for an intermediate pixel disposed between the pixel under consideration and an initial pixel, said initial pixel being disposed at an edge of said image and a vector from said initial pixel to the pixel under consideration corresponding to the respective derivative direction.

9. A method as claimed in claim 8 wherein, if a magnitude of the derivative for the intermediate pixel is equal to the magnitude of the derivative for the pixel under consideration, in said computer reducing the weighting factor specific to the derivative of the intermediate pixel more, if said derivative of the intermediate pixel is negative, than if said derivative for said intermediate pixel is positive.

10. A method as claimed in claim 1 comprising employing, as said information about the inner structure of the diaphragm, a designation of a known angle formed between two of said diaphragm edges and comprising, in said computer, detecting said diaphragm edges by detecting groups of image edges which, with one another, form said known angle.

11. A method as claimed in claim 10 comprising additionally employing, in said information about the inner structure of the diaphragm, a designation that two of

14

said diaphragm edges are parallel to each other and, in said computer, determining image edges as being diaphragm edges only if said images are parallel to each other and exhibit a minimum spacing from each other.

12.   A method as claimed in claim 1 wherein said image comprises a plurality of two-dimensionally arranged pixels, each having a grey scale value between a minimum value and a maximum value, and wherein said image date represent the respective grey scale values of the pixels, and wherein the step of detecting said image edges in said image comprises determining for each pixel, a derivative value from the grey scale value for that pixel and a grey scale of at least one other pixel and determining said image edges using said derivative values, and employing, as said information about the inner structure of the diaphragm, a designation of a known angle formed between two of said diaphragm edges and comprising, in said computer, detecting said diaphragm edges by detecting groups of image edges which, with one another, form said known angle, and, for said groups of image edges forming with one another said known angle, forming a sum value in the computer of the derivative values and testing said groups of image edges with larger sum values before groups of image edges with lower sum values.

13.   A computer program product for detecting diaphragm edges in an image, caused by a diaphragm used to gate radiation for producing the image, said image containing said diaphragm edges and other image edges, said computer program product, when loaded into a computer supplied with image data representing said image together with information describing an inner structure of the diaphragm, to analyze said image data for detecting all image edges in the image, and to determine said diaphragm images from among the detected image edges using said information.

14. A computer programmed for detecting diaphragm edges in an image, caused by a diaphragm used to gate radiation for producing the image, said image containing said diaphragm edges and other image edges, by receiving image data representing said image to a computer together with information describing an inner structure of the diaphragm, and by analyzing said image data for detecting all image edges in the image, and by determining said diaphragm images from among the detected image edges using said information.